NOTES

ONCE more we are glad to chronicle the opinion of a prominent politician on the value of science in education. The unanimity of our public men on this point is gratifying, and is a hopeful change from the ignorance of a few years ago. Sir Stafford Northcote, on Tuesday, in distributing the prizes to the students of Exeter School of Science and Art, maintained that the teaching of science cannot be begun at too early an age, as it is now recognised that a knowledge of science is indispensable in all handicrafts. Whilst acknowledging the great value of central agencies in London, yet he thought it desirable that still greater encouragement should be given to the establishment of museums and to the promotion of scientific research in the provinces. Of course, Sir Stafford stated, the great end attained by science classes was not so much the knowledge of a particular study as the development of the powers of the human mind, and training men to apply the utmost reasoning powers to the everyday work of life. It was the development of this mental vigour that would maintain the supremacy of the English race.

FROM the Report of Kew Gardens for 1880 we learn that the number of visitors during last year was 723,681, being an increase of 154,547 over the previous (very inclement) year, and nearly the same as in 1878. Only a comparatively small proportion of visitors take advantage of the early opening on bank-holidays. The scientific lessons given to the young gardeners have been well attended and successful. The Reports from Indian and Colonial Botanical Gardens are specially favourable this year. "A great increase of activity, arising from a variety of causes, has characterised almost all these institutions with which we are in regular correspondence, entailing a very great extension of the official work transacted at Kew, independent of the purely administrative work of the establishment itself." The numerous experiments described in the Report on various economical plants, both in our Colonial Gardens and at Kew itself, prove the great importance of the work carried on at the establishment to the whole empire. The addition of the Economico-botanical collection from the Indian Museum was a notable event of the year, adding so greatly to the resources of the establishment, and entailing much additional work. Other important additions were the collections of the late Prof. Schimper of Strassburg, and General Munro, C.B. It is to be regretted that Government declined to grant a small retaining fee for an entomologist, whose services are indispensable to such an institution as Kew. Mr. R. McLachlan, F.R.S., has hitherto acted as consulting entomologist without fee.

THE Marchese Corsi-Salviati has presented to the Royal Gardens life-size distemper drawings of the gigantic Aroid discovered by Beccari in West Sumatra, and described by him under the name of *Amorphophallus Titanum*. The dimensions of this plant are probably the most gigantic assumed by any herbaceous plant in one season's growth. The underground tuber is 5 feet in circumference. This produces, except when flowering, a single leaf whose stem is 10 feet high; above, this divides into three branches, each as thick as a man's thigh, and the ultimate segments of the much-divided leaf cover an area of 45 feet in circumference. The inflorescence is on a corresponding scale. The drawings are for the present hung for exhibition in the Wood Museum (No. 3).

THE submarine cable between Dover and Calais was carried out during the month of December, 1851, just thirty years ago, and it was on the 31st that the first message was sent from France to England and the traffic opened to the public. The first message was handed to Louis Napoleon, then Prince-President of the French Republic. It was simply a congratulatory salutation. The second was sent by an English banker to his correspondent in Paris, and related to the price of Consols. The Paris firm sent in return the Côte de la Bourse. This exchange of messages, including conveyance to the several offices did not take more than an hour. Before regular messages were sent experimental sparks were tried. The first which came over from the French shores fired an English gun which saluted the Duke of Wellington when leaving Dover by an express train. It was the last time he visited the place in his capacity of Lord Warden of the Cinque Ports.

MUCH has recently been written on the labours of medical women in India, and we find that such work is not without its reward also in China. According to the *Celestial Empire*, in the summer of 1879 the wife of Li Hung Chang, the great Viceroy of Chihli, was dangerously ill at Tientsin, and foreign medical assistance was called in. Chinese etiquette forbade the two doctors engaged obtaining sufficient knowledge of the case for treatment, and Miss Howard, an American lady with a medical diploma, was at once called in. Under her care Lady Li soon recovered. The result of this successful treatment of the illustrious Chinese lady was the establishment of a large hospital, under a foreign physician, the funds for which were provided by voluntary contribution from the native literati and gentry. The institution has just been opened by the Viceroy himself. When the news of Miss Howard's success reached America a wealthy gentleman of Baltimore subscribed funds to build a hospital for Chinese women at Tientsin, and the two buildings—one erected by Chinese, the other by American philanthropy—now stand side by side in that town. Li Hung Chang and his lady have both presented commemorative tablets to the hospital. One of them runs thus: "The skilful statesman and the skilful physician are alike in this: that they give their thought to cure what is ill. In the act of administering government and of dispensing cures, what hinders China and other lands from being one family?"

M. LISTON having made a series of very interesting observations on the temperature of water and on the conditions of freezing and thawing of a salted lake, Kupalnoye Ozero, in the province of Orenberg, Dr. Woeikoff contributes to the *Archives des Sciences Physiques et Naturelles* a note, with some remarks of his own on these observations which appeared in the eighth volume of the *Memoirs* of the Russian Geographical Society. This Lake Kupalnoye has a surface of 473 square metres and a depth of 1·42 metres, and its water contains 16 per cent. of salt, its bottom being covered with mud very rich in sulphide of hydrogen. The temperatures of the air having been, during the month of January, 1879, from − 6°·3 to − 28°·2 Celsius, with one interruption, when the thermometer reached for one day 0°·2; the temperature of the water at the surface was from − 3°·4 to − 13°·0, and at the bottom, from − 3°·8 to − 12°·8. On December 27, with a temperature of air as low as − 21°, the lake was covered with a viscous ice, which soon began, however, to thaw when the temperature of the air rose to − 6°, and the temperature of water was as low as − 7°·8. On January 3 all ice had disappeared, but the temperature of the water was still 7°·2 below the freezing point. On January 11, the temperature of the air being − 22°, and that of water being − 9°·8 at the surface and − 5°·6 at the bottom, the lake began again to be covered with viscous ice, and soon froze, the ice having a thickness of 38 millimetres, which thickness reached 153 mm. ten days later. But the remainder of the water was still unfrozen, notwithstanding that its temperature regularly decreased to − 10° on January 17, and even − 12°·8 on January 30. It was never observed before, M. Woeikoff says, in laboratories that salt water was cooled below − 4°, without being frozen, and here we have salt water which remains unfrozen at 13° below zero. However, former experiments, especially those of M. Zöppritz, proved that there is no diffusion of salt before congelation; it seems that in Lake Kupalnoye there is such a diffusion of salt towards the lower strata of water, even before the freezing begins; otherwise it would be difficult to explain how colder water might remain on the surface, were it not for the greater amount of salt in the lower strata. It was always difficult to explain, M. Woeikoff observes, how ice is formed on the surface of oceans, the temperature of the maximum of density being lower than that of the congelation; but the question is complicated in oceans by many causes, and therefore M. Woeikoff asked M. Liston to make observations on a salt lake: but Lake Kupalnoye contains too much salt to be compared with oceanic water, and thus it would be desirable to make experiments on this subject on large tanks filled with salt water, and exposed during the winter in rough climates to the action of low temperatures and of radiation.

IN the last number of the Geneva *Archives des Sciences Naturelles*, M. W. Meyer gives an account of the applications of the micro-telephone in the Observatory of Geneva for the transmission of the beats of a clock to observers occupied in different rooms of the Observatory. The experiments have been carried on for eighteen months, and although at first there were many difficulties, satisfactory results have been reached. During last year all comparisons of clocks were made by means of the micro-telephone, with the same accuracy as if they had been made directly. The average error of each observation does not exceed 0·06 of a second, and the constant error, deduced from fifty-nine series of observations, is very small (0·001 of a second). Another very interesting experiment was made in connection with the determination of longitudes between Vienna and Geneva, which was undertaken by MM. Oppolzer and Plantamour. By a new application of the microphone, M. Meyer caused the beats of the Observatory clock to be inscribed automatically on a chronograph; and afterwards, by putting this clock into communication with the Vienna Observatory, he made it inscribe its beats automatically on both chronographs, at Vienna and at Geneva, avoiding thus the auxiliary movement which usually establishes the contact in electrical clocks, and may be a cause of inaccuracy. MM. Plantamour and Oppolzer, being both at the time in Vienna, were able to ascertain the accuracy of this new combination, and they afterwards made use of it for the comparison of the Geneva clock with the electrical chronometer. A few improvements in the microphone add very much to the accuracy of the signals and the ease with which they are transmitted to the chronograph.

ON the sensitive surface of the body small spaces (it is known) can be distinguished within which two or more stimuli appear as one or simple; these vary in size and form in different parts. The retina must here be included. Now, the rods and cones forming the mosaic of the retina were recently counted by Herr Salzer, and in the central and most sensitive part—the yellow spot, where are only cones—he found a hundredth of a square millimetre to contain 132 to 138 of these. Dr. Du Bois Reymond has lately tested by experiment the supposition that these elements correspond to the "circles of sensibility" for the retina. If so, the number of light-points which, on the same extent of retinal surface (0·01 sq. mm.) give separate visual impressions, should correspond to Salzer's number of cones. The manner of experiment was this: The observer looked through a tube, blackened interiorly towards a perforated screen which could be shifted in the line of a beam of reflected sunlight coming towards the eye. The screen had, in a frame, a piece of tinfoil 5 ctm. square, perforated regularly with a fine sewing-needle in 460 places. This, while looked at, was gradually withdrawn in the line of sight. A point is reached, at which the light-points tend to unite in short lines; with further removal the lines are continuous, as in a grating; and with still further, the distinction of lines is lost. The distances corresponding to such effects were noted, and again, in bringing the screen back. The results are considered to confirm the view under trial, viz. that the number of circles of sensibility in the yellow spot is equal to the number of cones. When there were seventy-four light-points (or half the number of cones) in 0·01 sq. mm., they could just be distinguished, and beyond 149 the lines disappeared.

IN a recent number of *Naturen*, Prof. Axel Blytt concludes the highly interesting series of papers in which he has at some length expounded his theory of the immigrations into Norway of different floras during early dry and wet periods. On carefully examining the oldest Norwegian turf bogs, he finds, as Prof. Steenstrup has shown in Denmark, that four distinct turf layers may be traced between which there are frequently two, or even three, equally distinct deposits, composed of the roots and other remains of trees. The latter are found *in situ*, and by the undisturbed condition of the turf-beds above and below them they afford a conclusive proof that such severed trunks cannot have been cut down by human agency. These separate tree beds the author regards as mementoes of long periods of dryness, which may have endured for thousands of years, and during which the formation of turf was arrested, to be resumed again when a wet period supervened. Such interrupted periods of dryness and wet he considers to be closely related to the several long interrupted glacial periods, which, according to Geikie, have succeeded one another. In accordance with Herr Blytt's view the close of the first glacial age was followed by a dry period in which an Arctic flora appeared in Scandinavia, traces of which, as leaves of *Dryas octopetala* and *Salix reticulata*, have been found in the clay underlying the bogs in Denmark and Southern Sweden, in the latter of which the same flora is to be seen interposed between two ancient moraines. The boreal flora, the author is of opinion, we may refer to a dry period, characterised by great summer heat; and in the deposits belonging to this age we find abundant remains of such deciduous trees as, *e.g.* the hazel and the *Prunus avium*, which are now of rare occurrence in Norway, while many other vegetable forms represented in these beds have been long extinct. The differences observable in the bogs of Denmark and Norway Herr Blytt refers to the fact that while the former has undergone very little if any alteration of elevation, the latter has risen since the glacial age 600 feet above the level of the sea. In Norway the formation of the turf beds may be gauged by their varying elevations. Thus in South-East Norway, where the old sea-level has been raised to a height of 600 feet, the turf is from 20 to 26 feet deep, while at low levels, as 30 feet above the strand, the bogs are seldom more than from 2 to 4 feet deep. The author believes that we are justified in expecting that a more careful working out of the theory of the alternation in early times of dry and wet periods will help to elucidate many hitherto unexplained geological and botanical relations, including the distribution of plants; and he considers it probable that the temperature of the ocean, on which climate so largely depends, may similarly be subjected to periodic changes dependent on cosmical laws not less firmly fixed than those which control the movements of the planetary worlds.

WE have received from the editor of the *Natural History Journal* various forms for the entry of observations on meteorology and natural history, which are issued to their correspondents in different parts of the country, the meteorological forms being returned to Mr. J. E. Clark, 20, Bootham, York, while those referring to natural history are communicated to Mr. F. A. Lees, Wetherby, Yorkshire. The proposed meteorological observations are fairly satisfactory as regards the natural phenomena in connection with which they are made. The mean date of flowering of each of the thirty selected wild plants for the last three years is given, a feature in the forms well calculated to awaken and sustain the interest of the observers. By these observations carefully made and recorded from year to year, important data will be collected of no little practical and scientific value.

THE Perthshire Natural History Society has had a most successful bazaar in aid of its Natural History Museum, for which it has now secured in all 3300*l.* As they already have a building, the Society ought soon to be able to show an excellent local museum, and make a fair start in the educational enterprise which they have in view. Did "John Stewart's Wines and Spirits," "B. Smith's Sparkling Burgundy," "Peter McIntyre's Buns and Shortbread," "Donald Laing's 2*s.* Tea of Extraordinary Quality," and such like articles, form part of the exhibits at the bazaar? We would infer as much from the style in which the programme is printed.

THE fifth associated *soirée* of the Literary, Scientific, and Art Societies of Liverpool took place on the 21st inst. at St. George's Hall, under the presidency of the Mayor of Liverpool. Of the societies represented, no less than nineteen have distinctly scientific objects, and number 2700 members. In the objects exhibited in the Great Hall were many of considerable biological and geological interest, especially entomological specimens from the neighbourhood of Liverpool, collected by the Rev. H. H. Higgins, and a set of types of the genus *Nassa*, arranged and named by Mr. F. P. Marrat, of the Free Museum, who has done much to elucidate this group of Mollusca. Numerous lectures were given during the *soirée;* those of scientific interest were—"On the Storage and Transmission of Electric Force," by Mr. Fletcher, H.M. Inspector of Alkali Works; "On the Mersey Tunnel, and its Geological Aspects," by Mr. De Rance, H.M. Geological Survey; "On Life at Great Depths in the Ocean," by Prof. Herdman; "On the Life-History of Shell-Fish," by Dr. Hicks. Prof. Herdman described several new forms of life obtained by the *Challenger*, while Mr. De Rance foretold a probably successful termination to the Mersey Tunnel, now one-quarter completed. Nearly 4000 people attended the *soirée*.

WE are glad to see that a Natural History Society has been established in North London, under the name of the "North Middlesex Natural History Association." A Society of this description was much needed in the neighbourhood, and there is, therefore, every prospect of its doing useful work. The objects of the Association will be the formation of a natural history museum, and a library for reference and circulation among members: also the diffusion of natural history knowledge by means of lectures, papers, discussions, &c. It is also proposed to organise field excursions during the summer months. The meetings are held every Tuesday evening between the hours of eight and eleven o'clock p.m. The Secretary is Charles M. Allen, 26, Ingleby Road, Grove Road, Holloway, N.

THE President of the Royal College of Physicians has appointed Dr. George Johnson, F.R.S., to deliver the Harveian Oration.

THE balloon which was seen in the neighbourhood of Santander in Spain, and which was conjectured to be that in which Mr. Powell was carried off, was probably, according to M. W. de Fonvielle, a French meteorological balloon, sent up by the Paris aëronauts equipped to register the phenomena of the upper atmosphere, and with a polyglot request that it be forwarded by the finder to the address given.

TWO earthquake shocks were felt on the 18th inst. in Switzerland, at Bers, Vevey, Lausanne. A few days previously oscillations were observed in Neuchatel, the Valais, and other parts of Switzerland.

THE long-continued eruption of Mount Vesuvius has within the last few days assumed large proportions. Copious streams of lava have been flowing in an easterly direction. It is noteworthy that this increased activity was preceded by sensible seismic agitation of the soil in the neighbouring provinces.

THE new number of the *Proceedings* of the Bristol Naturalists' Society (vol. iii. part ii., Bristol, Fawn and Son) contains some useful papers. We may mention the following:—On the breathing of aquatic larvæ, by W. J. Fuller; On the preparation of a local flora, by J. Walter White; The boulders of the Bromsgrove district, by Oliver Giles; Catalogue of the Lepidoptera of the Bristol district, by A. E. Hudd; Fungi of the Bristol district, by Cedric Bucknall; A naturalist's rambles in Guernsey, by Adolph Leipner; Recent investigations on the cause of storms, by G. F. Burder; papers on Binaural Audition and the Phenautograph, by Prof. S. P. Thompson; and the flora of the Bristol coal-field, by J. Walter White, Part I. Thalamifloræ.

A REPORT from the German Fisheries Union states that during the season 1880–81 no less than 6,151,036 fish ova were artificially hatched, and with the young brood various German rivers were stocked. Amongst them were 1,792,000 salmon, all from the Rhine (with the exception of 18,000 from Pomerania), 295,000 Californian salmon (imported direct from America), 183,500 sea trout (*Trutta trutta*), 6000 *Trutta lacustris*, 46,000 *Trutta fario*, 270,000 *Salmo salvelinus*, 48,536 American trout, 152,000 *Thymallus vulgaris*, 657,000 *Gymnothorax muræna*, 1,810,000 *Coregonus Wartmanni*, 335,000 eels, 151,000 American eels, and 720,000 carp. The results of the Society's efforts become more and more apparent every day in the largely augmented receipts of German fisheries generally.

ON Wednesday, December 21, diplomas of the Royal Agricultural College, Cirencester, were granted to four candidates, and the sessional certificates and prizes distributed.

ON April 10, 1882, the second International Congress for Ethnographical Sciences will be opened at Geneva. The organisation of the Congress is in the hands of M. G. Becker at Lancy (Geneva), the delegate of the Swiss Ethnographical Institute. All who wish to participate in the Congress must send their names to him or to the delegates of the countries they may reside in. The Congress will be divided into seven sections:—(1) Origin and migrations of peoples; (2) Ethnology; (3) Descriptive ethnography; (4) Theoretical ethnography; (5) Manners and customs; (6) Political ethnography; (7) International law. Delegates have already been announced from the following countries:—France, Belgium, England, Luxemburg, Sweden and Norway, Russia, Germany, Roumania, Greece, Italy, Spain, Portugal, Switzerland, Turkey, Egypt, British India, Japan, Canada, the United States, Peru, Australia, and the Argentine Republic.

THE *Transactions* of the Epping Forest Field Club contain some unusually interesting papers. In parts 4 and 5, for example, vol. ii., we have, among others, the following papers: "Is *Vanessa polychloros* the prototype of *Vanessa urticæ?*" by W. White; "The Evolution of Fruit," by Prof. Boulger; "The Developmental Character of the *Larvæ* of the Noctuæ, as Determining the Position of that Group," by Raphael Meldola; "Infusoria, what are They?" by W. Saville Kent; "Report on the Excavation of the Earthwork known as Ambresbury Banks, Epping Forest, by Gen. Pitt-Rivers." Evidently this young Society is doing good work.

THE additions to the Zoological Society's Gardens during the past week include a Malbrouck Monkey ♀ (*Cercopithecus cynosurus*) from West Africa, presented by Mr. C. A. Rose; a Chilian Teal ♂ (*Querquedula creccoides*) from Chili, presented by M. J. M. Cornely; a Kite (*Milvus ictinus*), European, presented by Mr. G. H. Tod-Heatley; a Rhesus Monkey ♀ (*Macacus erythræus*) from India, a Greater Sulphur-crested Cockatoo (*Cacatua galerita*) from Australia, deposited; a White-browed Amazon (*Chrysotis albifrons*) from Honduras, a White-headed Parrot (*Pionus senilis*) from Mexico, a Javan Parrakeet (*Palæornis javanicus*) from Java, two Chestnut-breasted Ducks (*Anas castanea*, ♂ ♀) from Australia, a Germain's Peacock Pheasant ♂ *Polyplectron germaini*) from Cochin China, a Black-throated Diver (*Colymbus arcticus*), two Oyster-catchers (*Hæmatopus ostralegus*) British, a —— Deer ♂ (*Cervus* sp. inc.) from Patagonia, purchased; four Undulated Grass Parrakeets (*Melopsittacus undulatus*) bred in the Gardens.

OUR ASTRONOMICAL COLUMN

The Satellites of Mars.—The following Greenwich times of elongations of these satellites are taken from an ephemeris contributed by Prof. Pritchett to *Science* of November 26. At elongation *Deimos* is distant about 52″ from the planet's centre and *Phobos* about 21″; the angle of position, 246°. 5h. 13m. are added to the Washington mean time, for difference of longitude and aberration-time:—

Deimos.

	h. m.		h. m.		h. m.
Dec. 30,	11 57 W.	Jan. 2,	15 36 E.	Jan. 4,	13 0 W.
Jan. 1,	9 20 E.	3,	6 44 W.	6,	10 24 E.

Phobos (W. elongations).

	h. m.		h. m.		h. m.
Dec. 30,	8 16	Jan. 2,	12 46	Jan. 5,	9 38
31,	7 13	3,	11 44	6,	8 36
Jan. 1,	6 10	4,	10 41	7,	7 33

Comet 1881 *g* (Swift, November 16).—From observations between November 22 and December 12, Herr J, Palisa has calculated the following orbit of the comet: we express the elements in the form usual in the Catalogues:—

Perihelion passage 1881, November 19·9987 Greenwich M.T.

	° ″ ′	
Longitude of perihelion	63 17 57	M. Eq. 1881·0.
,, ascending node	181 21 41	
Inclination	35 11 54	
Log. perihelion distance	0·284788	

Motion—retrograde.

There is still a certain resemblance to the orbit of the first comet of 1792, discovered by Miss Caroline Herschel, as last calculated by Mechain, but the differences in the elements would not be accounted for by perturbation in the interval, so that it is probable the comets are distinct. Maskelyne's observations in 1791-92 will be found in his third volume in a form that will admit of a new reduction.

The Comets of Short Period.—No one of the known comets of short period is due at perihelion in the year 1882. The next to return may probably be that discovered by Tempel in July 1873, at the end of the year 1883, and about the same time D'Arrest's comet will be round again. Brorsen's comet follows in the autumn of 1884.

Variable Stars.—The following are Greenwich times of heliocentric minima of Algol, calculated upon similar data to those used for Prof. Winnecke's ephemeris for 1881:—

	h. m.		h. m.		h. m.
January 3,	16 18·9	January 12,	6 45·5	January 29,	11 38·9
6,	13 7·7	23,	18 1·1	February 1,	8 27·8
9,	9 56·6	26,	14 50·0		

Minima of S Cancri occur on January 19, at 13h. 1m., and February 7, at 12h. 16m. A maximum of the "crimson star" R Leporis may be expected about January 19; the period from the last fifteen years' observations is close upon 436½ days.

We may once more draw attention to the star with which Encke's comet was compared by Rümker at Paramatta on June 19, 1822, and which is certainly variable to a considerable extent. Rümker estimated it between the fourth and fifth magnitude; Gould says 6·0 in the *Uranometria Argentina*; the star is 6·5m. in the *Durchmusterung*, but has been several times noted as low as the eighth magnitude: perhaps systematic observation may show that the period is not a long one. The position of this star for 1882·0 is in R.A. 7h. 23m. 21s., N.P.D. 91° 39′·8.

GEOGRAPHICAL NOTES

Information has been received from Tromsoe which augurs well for the success of Mr. Leigh Smith's present voyage. Capt. Isaaksen, of the Norwegian whaler *Proven*, saw the *Eira* on June 30 at Matushin Straits at the edge of the ice, a few miles from the coast. On July 2 he again saw the *Eira* steaming southward, and he concludes that Mr. Smith failed to force his way along the coast of Nova Zembla. It is supposed that he again failed to pass Kara Straits, as he was afterwards seen bearing north from Gooseland. Capt. Isaaksen says that the ice was in about its usual position in June and July, but on August 8 it had all gone, he did not know where or how. On the 16th of that month there was no ice twenty miles north of Nova Zembla, but a heavy sea was running from the north. This conclusively shows that the sea was open for a very considerable distance, probably as far as Franz Josef's Land, which Capt. Isaaksen feels certain Mr. Smith has reached, and in such circumstances he would not be astonished if tidings came of his having reached a point very much nearer the North Pole this year. As might have been expected, the Russian Government and Mr. Gordon Bennett are doing everything possible to succour the people of the crushed *Jeannette*; we hope they will soon be all safe in Western Europe.

Dr. Stecker, the companion of Dr. G. Rohlfs, writes on June 21 to the editor of *Petermann's Mittheilungen*, from Debra Tabor, on the results of his last journey to Lake Tana. He has explored all the lake, visited the mountains on its shores, and prepared a detailed map of this basin, which covers a surface of 2980 square kilometres, the level of which is 1942 metres above the sea, and which is 30 to 72 metres deep. The map will be the more welcome as Dr. Stecker says that all former maps of the Gorgora Mountains, situated north of the lake, and of its southern shores, are quite wrong. Dr. Stecker is satisfied with the reception he received during his journey from the native rulers, and especially from the Negus, who promises to let him go to Kaffa. During his stay at Lake Tana Dr. Stecker made interesting collections of plants, insects, fishes, and molluscs, and he discovered in the Gorgora Mountains unmistakable proofs of volcanic activity: eruptive cones, a crater, and a mighty lava stream, all probably recent, as in the volcanic rocks, he has found inclosed remains of a mollusc which still inhabits the waters of Laka Tana. After the end of the rainy season he proposes to explore the negro tribes who live west of Lake Tana, and then to travel either to the mouth of the Juba River or to Zanzibar *viâ* Lake Samburu, Mounts Kenin and Kilimangaro.

The expedition led by Lieut. Holm, and sent out early in the summer by the Copenhagen Commission for the geological and geographical investigation of Greenland, has just returned. The expedition proceeded to the southernmost part of Greenland; they succeeded in circumnavigating the large islands on the southern coast, and in determining the exact position of Cape Farewell. The land itself was investigated as far as line drawn from the Tasermint Fjord on the west coast, to the Lindenows Fjord on the east coast. It contains magnificent alpine scenery with enormous glaciers, particularly on the western side. The low-lying eastern part is covered with a layer of ice and snow, which forms hills and valleys, following the soil underneath; here and there mountain peaks rise above the immense winter landscape.

The *Oesterreichische Monatsschrift für den Orient* for November contains a paper by von Hellwald on the Gilyaks of Eastern Siberia. They inhabit the districts of the Lower Amour, the coast of the Straits of Tartary, and the northern part of Saghalin. Estimates of their numbers vary from 8000 to 3000. Col. Wenjukow thinks they form a special branch of the yellow race, but not a subdivision of the Tungusic stock. Their language, he says, has no resemblance to the Tungusic, and their physiological structure betoken a more powerful and energetic race than the neighbouring Magunes, Samagry, &c. Ravenstein also distinguishes the Gilyak tongue, which is rich in monosyllables, from the Tungusic, and others distinguish it from the Aino, with which it has been sometimes connected. They are said to have oblique eyes, prominent cheek-bones, and scanty beards; the